WHAT IS CLAIMED IS:

1. A method for forwarding data within a redundant system having an active router and a standby router, the method comprising:

sending a first packet that forms part of a data connection, the first packet having a first send sequence number and the first packet being sent from the active router to a receiver, wherein the data connection is a type of connection that tracks the sequence of data sent between the active router and the receiver;

receiving a second packet having an associated first receive sequence number, and the second packet being received into the active router from the receiver; and

communicating the first send sequence number and the first receive sequence number to the standby router.

2. A method as recited in claim 1, further comprising:

when the standby router replaces the first active router as a second active router, sending a sequence number recovery packet from the second active router to the receiver, the sequence number recovery packet having an associated sequence number and an associated acknowledgement number, wherein the first send sequence number is used as the sequence number associated with the sequence number recovery packet and the first receive sequence number is used as the acknowledgement number associated with the sequence number recovery packet;

in response to the sequence number recovery packet, receiving a sequence recovery information packet from the receiver into the second active router, the sequence recovery

information packet having an associated sequence number and an associated acknowledgement number; and

sending a data packet from the second active router to the receiver, the data packet including the sequence number and the acknowledgement number that are associated with the sequence recovery information packet.

3. A method as recited in claim 2, wherein the data connection is a Transmission Control Protocol (TCP) connection.

4. A method as recited in claim 3, wherein the sequence number recovery packet and sequence recovery information packet are each an acknowledgement packet.

5. A method as recited in claim 3, wherein the first packet establishes a start of the TCP connection.

6. A method as recited in claim 5, wherein the first packet is a SYN packet.

7. A method as recited in claim 2, wherein the second packet is in response to the first packet.

8. A method as recited in claim 2, wherein the first packet is an acknowledgement packet for the second packet, the second packet being sent prior to the first packet.

9. A method as recited in claim 2, wherein the connection is a TCP connection, the first packet is a SYN packet, and the second packet is a data packet.

10. A method as recited in claim 2, wherein the connection is a TCP connection, and wherein both the first and second packets are data packets and not SYN or acknowledgement packets.

11. A method as recited in claim 2, wherein the redundant system is a checkpointed non-stop forwarding system.

12. A method as recited in claim 1, further comprising:

continuing to send a plurality of subsequent send packets that forms part of the data connection, each of the packets each having an associated send sequence number and the plurality of subsequent send packets being sent between the active router to the receiver;

continuing to receive a plurality of subsequent receive packets that each have an associated receive sequence number, and the subsequent receive packets being received into the active router from the receiver in response to the subsequent send packets; and

periodically communicating the send sequence numbers and the receive sequence numbers associated with the subsequent receive and send packets, respectively, to the standby router as replacements for the first receive and send sequence numbers, respectively.

13. A network system operable to forward data within a computer network, the network system comprising:

an active router configured to forward data within the computer network; and

a standby router configured to replace the active router when the active router fails,

wherein the active router is operable to:

send a first packet that forms part of a data connection, the first packet having a first send sequence number and the first packet being sent from the active router to a receiver, wherein the data connection is a type of connection that tracks the sequence of data sent the active router and the receiver,

receive a second packet having an associated first receive sequence number, and the second packet being received into the active router from the receiver, and

communicate the first send sequence number and the first receive sequence number to the standby router.

14. A network system as recited in claim 13, wherein the active router is a separate device from the standby router.

15. A network system as recited in claim 13, wherein the standby router is further operable to:

send a sequence number recovery packet from the second active router to the receiver when the standby router replaces the first active router as a second active router, the sequence number recovery packet having an associated sequence number and an associated acknowledgement number, wherein the first send sequence number is used as the sequence number associated with the sequence number recovery packet and the first receive sequence number is used as the acknowledgement number associated with the sequence number recovery packet,

in response to the sequence number recovery packet, receive a sequence recovery information packet from the receiver into the second active router, the sequence recovery

information packet having an associated sequence number and an associated acknowledgement number, and

send a data packet from the second active router to the receiver, the data packet including the sequence number and the acknowledgement number that are associated with the sequence recovery information packet.

16. A network system as recited in claim 15, wherein the data connection is a Transmission Control Protocol (TCP) connection.

17. A network system as recited in claim 16, wherein the sequence number recovery packet and sequence recovery information packet are each an acknowledgement packet.

18. A network system as recited in claim 16, wherein the first packet establishes a start of the TCP connection.

19. A network system as recited in claim 18, wherein the first packet is a SYN packet.

20. A network system as recited in claim 15, wherein the second packet is in response to the first packet.

21. A network system as recited in claim 15, wherein the first packet is an acknowledgement packet for the second packet, the second packet being sent prior to the first packet.

22. A network system as recited in claim 15, wherein the connection is a TCP connection, the first packet is a SYN packet, and the second packet is a data packet.

23. A network system as recited in claim 15, wherein the connection is a TCP connection, and wherein both the first and second packets are data packets and not SYN or acknowledgement packets.

24. A network system as recited in claim 15, wherein the network system is a checkpointed non-stop forwarding system.

25. A network system as recited in claim 13, wherein the active router is further operable to:

continue to send a plurality of subsequent send packets that forms part of the data connection, each of the packets each having an associated send sequence number and the plurality of subsequent send packets being sent from the active router to the receiver;

continue to receive a plurality of subsequent receive packets that each have an associated receive sequence number, and the subsequent receive packets being received into the active router from the receiver in response to the subsequent send packets; and

periodically communicate the send sequence numbers and the receive sequence numbers associated with the subsequent receive and send packets, respectively, to the standby router as replacements for the first receive and send sequence numbers, respectively.

26. A computer program product for forwarding data within a redundant system having an active router and a standby router, the computer program product comprising:

at least one computer readable medium;

computer program instructions stored within the at least one computer readable product configured to cause the redundant system to:

send a first packet that forms part of a data connection, the first packet having a first send sequence number and the first packet being sent from the active router to a receiver, wherein the data connection is a type of connection that tracks the sequence of data sent between the active router and the receiver;

receive a second packet having an associated first receive sequence number, and the second packet being received into the active router from the receiver; and

communicate the first send sequence number and the first receive sequence number to the standby router.

27. A computer program product as recited in claim 26, wherein the computer program instructions stored within the at least one computer readable product are further configured to cause the redundant system to:

when the standby router replaces the first active router as a second active router, send a sequence number recovery packet from the second active router to the receiver, the sequence number recovery packet having an associated sequence number and an associated acknowledgement number, wherein the first send sequence number is used as the sequence number associated with the sequence number recovery packet and the first receive sequence number is used as the acknowledgement number associated with the sequence number recovery packet;

in response to the sequence number recovery packet, receive a sequence recovery information packet from the receiver into the second active router, the sequence recovery

information packet having an associated sequence number and an associated acknowledgement number; and

send a data packet from the second active router to the receiver, the data packet including the sequence number and the acknowledgement number that are associated with the sequence recovery information packet.

28. A computer program product as recited in claim 27, wherein the data connection is a Transmission Control Protocol (TCP) connection.

29. A computer program product as recited in claim 28, wherein the first packet establishes a start of the TCP connection.

30. A computer program product as recited in claim 29, wherein the first packet is a SYN packet.

31. A computer program product as recited in claim 27, wherein the second packet is in response to the first packet.

32. A computer program product as recited in claim 26, wherein the computer program instructions stored within the at least one computer readable product are further configured to cause the redundant system to:

continue to send a plurality of subsequent send packets that forms part of the data connection, each of the packets each having an associated send sequence number and the plurality of subsequent send packets being sent from the active router to the receiver;

continue to receive a plurality of subsequent receive packets that each have an associated receive sequence number, and the subsequent receive

packets being received into the active router from the receiver in response to the subsequent send packets; and

periodically communicate the send sequence numbers and the receive sequence numbers associated with the subsequent receive and send packets, respectively, to the standby router as replacements for the first receive and send sequence numbers, respectively.

33. An apparatus for forwarding data within a redundant system having an active router and a standby router, the apparatus comprising:

means for sending a first packet that forms part of a data connection, the first packet having a first send sequence number and the first packet being sent from the active router to a receiver, wherein the data connection is a type of connection that tracks the sequence of data sent between the active router and the receiver;

means for receiving a second packet having an associated first receive sequence number, and the second packet being received into the active router from the receiver; and

means for communicating the first send sequence number and the first receive sequence number to the standby router.

34. An apparatus as recited in claim 33, further comprising:

means for sending a sequence number recovery packet from the second active router to the receiver when the standby router replaces the first active router as a second active router, the sequence number recovery packet having an associated sequence number and an associated acknowledgement number, wherein the first send sequence number is used as the

sequence number associated with the sequence number recovery packet and the first receive sequence number is used as the acknowledgement number associated with the sequence number recovery packet;

means for, in response to the sequence number recovery packet, receiving a sequence recovery information packet from the receiver into the second active router, the sequence recovery information packet having an associated sequence number and an associated acknowledgement number; and

means for sending a data packet from the second active router to the receiver, the data packet including the sequence number and the acknowledgement number that are associated with the sequence recovery information packet.